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(54) A quilt filling.

(57) A quilt filling comprising a filling pad (2) having a plurality of holes (3) extending from the upper surface (4) to the lower surface (5) thereof. The holes (3) are of a size and distribution which allows controlled heat dispersion and ventilation.

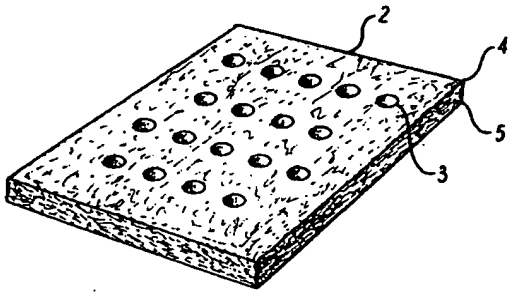

FIG. 1

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This invention relates to a quilt filling and, in particular, to a quilt filling with a lower tog rating for use with infants.

In recent years, there has been a growing concern among the public due to the incidence of cot deaths. The causes of cot deaths are unclear. Researchers have failed to find a solution. However, suffocation and over heating are two of the main possible causes.

An object of the present invention is to provide a solution to the problem of over heating and suffocation.

A further object of the present invention is to provide cosmetic appeal in a decreased tog quilt.

A still further object of the present invention is to provide a quilt which provides greater infant safety and comfort.

According to a first aspect of the present invention there is provided a quilt filling comprising a filling pad, the said pad having a plurality of holes extending from the upper to the lower surface thereof, the said holes being of a size and distribution which allows controlled heat dispersion and ventilation.

According to a second aspect of the present invention there is provided a method of producing a quilt filling comprising the steps of:-

1. Cutting a piece of filling pad to the appropriate size for the quilt required;
2. Forming holes in the said pad, such that the pad has a plurality of holes extending from the upper to the lower surface thereof, the said holes being of a size and distribution which allows controlled heat dispersion and ventilation.

According to a third aspect of the present invention there is provided a filling pad hole forming apparatus comprising hole forming means operable to cut a hole in a filling pad, the said apparatus being designed to cut a plurality of holes and extending from the upper to the lower surface of the said pad, the said holes being of a size and distribution which allows controlled heat dispersion and ventilation.

Preferably, the cross-sectional area of at least one of the said holes is between 0.5cm^2 and 100cm^2.

More preferably, the cross-sectional area is between 1cm^2 and 25cm^2.

Most preferably, the cross-sectional area is between 4cm^2 and 16cm^2.

Typically, the cross-sectional area is substantially 2.5cm^2.

Preferably, the size of the gaps between adjacent holes are in the range of 0.5cm to 5cm.

More preferably, the size of the gaps between adjacent holes are in the range of 0.5 cm to 2cm.

Most preferably, the size of the gaps between adjacent holes are in the range 1cm to 1.5cm.

Advantageously, the quilt or duvet gives the appearance of being the normal thickness but is much lighter, does not retain heat in the same way, and allows a greater flow of oxygen. Thus, although the quilt retains the appealing traditional appearance it is, in fact, a cooler item of bedding for a baby or child to sleep under.

In a preferred embodiment the holes are arranged in a plurality of rows, at least two of said rows comprising different numbers of holes. Adjacent rows of holes preferably comprise different numbers of holes.

In a further preferred embodiment, the constructions of the quilt or duvet is as follows; the centre core, is a fibre pad which has a varying shape, cross-sectional area and distribution of holes punched throughout it. The configuration may be varied depending on the amount of reduction of held heat that is required.

Embodiments of the invention will now be described by way of example, with reference to the accompanying drawings in which:-

Fig.1 shows a perspective view of a quilt filling;

Fig.2(a) shows a partial view of a quilt filling surface;

Fig.2(b) is a view of a quilt filling showing partially the distribution of holes;

Fig.3(a) shows a partial view of a further quilt filling surface; and

Fig.3(b) is a view of a further quilt filling showing partially the distribution of holes.

Referring to fig. 1 a rectilinear quilt filling 2 has a plurality of holes extending from the upper surface to the lower surface thereof. The holes are of a substantially constant cross-section.

Tests have shown that the presence of the holes gives a reduced tog rating. For instance, a totally unpunched fibre pad with a tog rating of 5.45 has been shown to have a tog reduction to 3.1 on a 7 ounce fibre and 3.8 on a 9 ounce fibre respectively. Variation in the distribution and size of hole leads to variation in the reduction in tog rating. A tog rating reduction of between 20 and 43% has been noted. In addition, an increase in air permeability of 8% has been found.

Referring to fig.2 a partial view of a upper quilt surface is shown having square holes formed therein. The said square holes are of size 2.8cm and have a 1cm gap between adjacent holes.

Referring to fig.2(b) the holes are shown to consist of alternative rows of five and four holes and the quilt filling has a border extending therearound in which no holes are formed. The border adds strength to the quilt filling to give the product an extended life.

Referring to fig.3 a similar partial view of a quilt surface is shown in which square holes of size 2.8cm are spaced from adjacent square holes by 1.5cm.

The use of such holes on a seven ounce fibre has been shown to give a reduction in the tog rating to 3.1. Similarly, the use of such a distribution of a nine ounce fibre had led to a reduction in the tog rating to 3.8.

A method of preparation of the quilt fillings is to manufacture the fibre pad required in the normal manner and to punch holes through the pad in accordance with reduction in tog rating, oxygen distribution and heat transference characteristics required. The punches may be squared or round or of any shape and, in certain instances, it can be envisaged that the shape of the holes will add to the aesthetic appeal of the product.

The fibre pad or foam filling may be of any currently available material such as, for example, a polyester fibre pad or combustion modified high resilient (CMHR) foam.

It is to be understood that the embodiment of the invention described above are by way of illustration only. Many modifications and variations are possible.

Claims

1. A quilt filling characterised in that the quilt filling comprises a filling pad (2), the said pad having a plurality of holes (3), said holes extending from the upper surface (4) to the lower surface (5) thereof, the said holes being of a size and distribution which allows controlled heat dispersion and ventilation.

2. A quilt filling as claimed in claim 1, characterised in that the cross-sectional area (6) of at least one of the said holes (3) is between 0.5cm^2 and 100cm^2.

3. A quilt filling as claimed in claim 2, characterised in that the said cross-sectional area (6) is substantially 2.5cm^2.

4. A quilt filling as claimed in any preceding claim, characterised in that the size of the gaps (7) between adjacent holes (3) is in the range of 0.5cm to 5cm.

5. A quilt filling as claimed in claim 4, characterised in that the size of said gaps (7) is in the range of 1cm to 1.5cm.

6. A quilt filling as claimed in any preceding claim, characterised in that the said holes (3) are arranged in rows, at least two of said rows comprising different numbers of holes.

7. A quilt filling as claimed in any preceding claim, characterised in that the said filling pad is made from a polyester fibre or combustion modified high resilient (CMHR) foam.

8. A quilt filling as claimed in any preceding claim, characterised in that the said filling has a border extending therearound in which no holes are formed.

9. A process of producing a quilt filling, characterised by the steps of:-
   a) cutting a piece of filling pad (2) to the appropriate size for the quilt required;
   b) forming holes (3) in the said pad, such that the pad (2) has a plurality of holes (3) extending from the upper surface (4) to the lower surface (5) thereof, the said holes being of a size and distribution which allows controlled heat dispersion and ventilation.

10. A filling pad hole forming apparatus comprising hole forming means operable to cut a hole (3) in a filling pad (2), the said apparatus characterised in that it is designed to cut a plurality of holes (3) extending from the upper surface (4) to the lower surface (5) of the said pad (2), the said holes (3) being of a size and distribution which allows controlled heat dispersion and ventilation.

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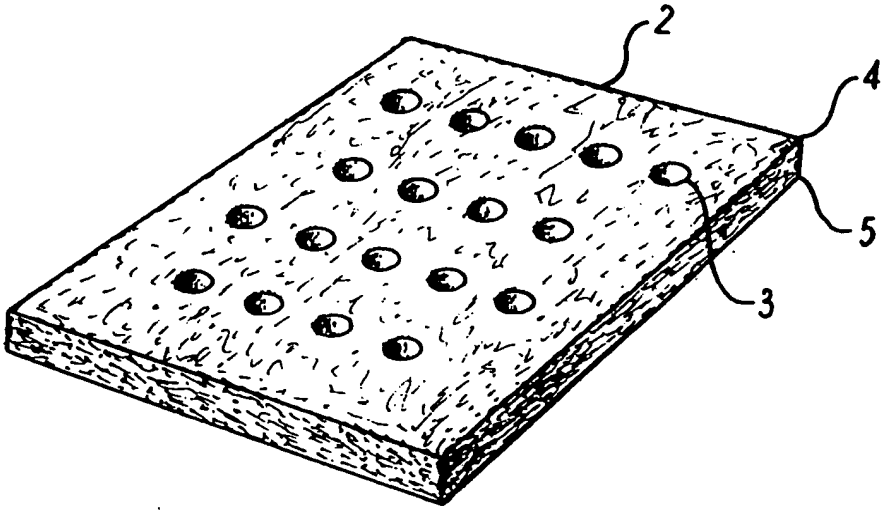

FIG. 1

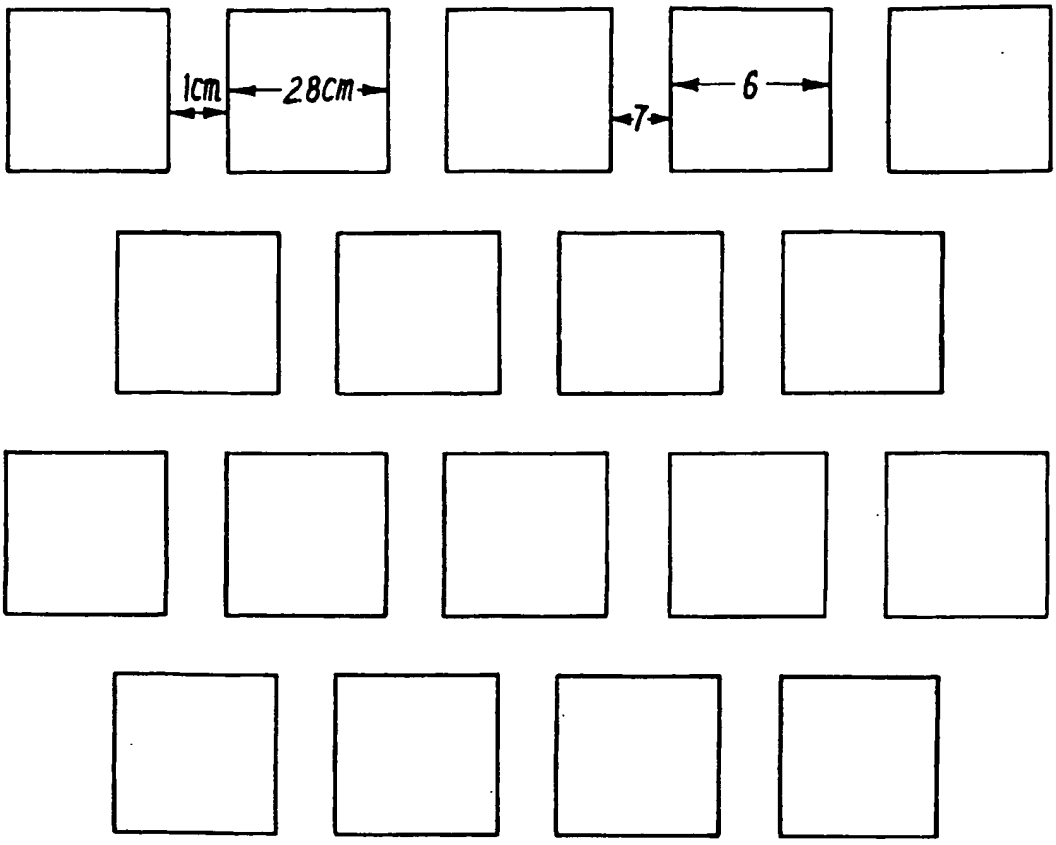

FIG. 2(a)

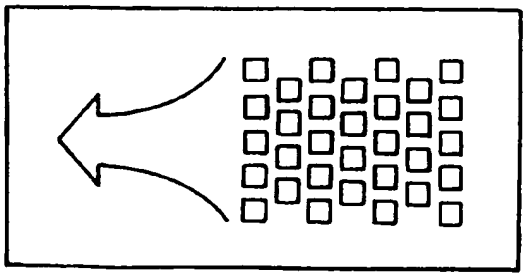

FIG. 2(b)

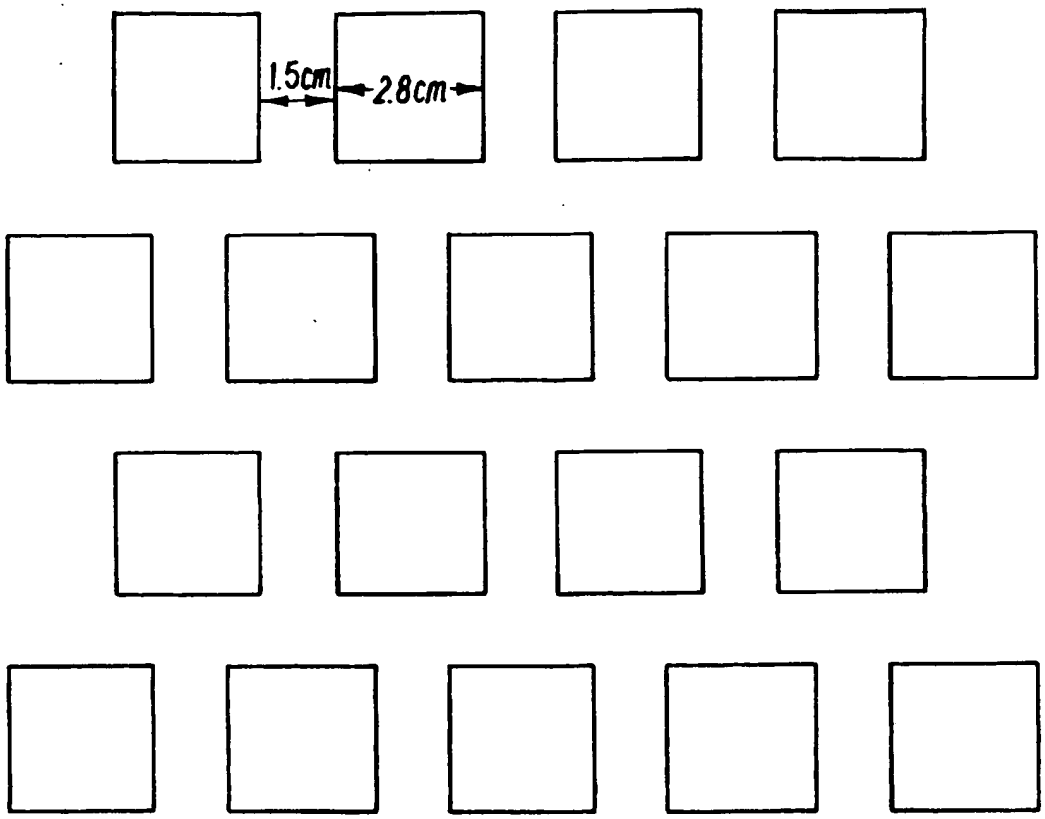

FIG. 3(a)

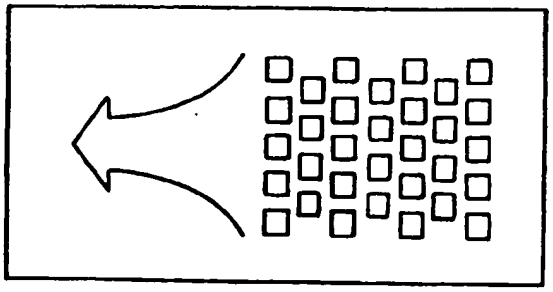

FIG. 3(b)

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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 2014

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X A	GB-A-2 153 662 (SIMPLANTEX) * the whole document *	1 2-10	A47D7/00 A47C21/04
X A	GB-A-2 230 949 (HYMAN BABYCARE) * the whole document *	1 2-10	
A	US-A-1 517 617 (CLEVELAND)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47D A47C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	5 July 1995	VandeVondele, J

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